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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,823	12/11/2003	Kelly Cameron	51318/RJP/B600	2171

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EXAMINER	
TORRES, JOSEPH D	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/733,823	CAMERON, KELLY	
	Examiner	Art Unit	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-17* is/are pending in the application.

4a) Of the above claim(s) *2-6 and 13-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/11/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Claims 7-12 in the reply filed on 06/30/2005 is acknowledged.

Claims 2-6 and 13-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 06/30/2005.

Claim Objections

2. Claim 7 is objected to because of the following informalities: Claim 1 recites, "a syndrome polynomial receiver receiving **an uncorrected syndrome polynomial** of the algebraic-coded message that includes redundancies usable to determine an existence of errors, a location and magnitude of errors and discrepancy values".

The Examiner asserts that, generally, syndrome polynomials are generated in order to detect whether there are any errors in an algebraic-coded message and, if there are, the Syndrome polynomial is used to generate error locations and magnitudes as well as certain intermediate values used in the generation of error locations and magnitudes such as discrepancies. It is not clear what "an uncorrected syndrome polynomial" refers to and how it differs from the standard syndrome polynomial.

In addition the limitation is ambiguous since it is not clear whether the "uncorrected syndrome polynomial" includes redundancies or whether the algebraic-coded message includes redundancies.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 1 recites, "a syndrome polynomial receiver receiving **an uncorrected syndrome polynomial** of the algebraic-coded message that includes redundancies usable to determine an existence of errors, a location and magnitude of errors and discrepancy values". The Examiner asserts that, generally, syndrome polynomials are generated in order to detect whether there are any errors in an algebraic-coded message and, if there are, the Syndrome polynomial is used to generate error locations and magnitudes as well as certain intermediate values used in the generation of error locations and magnitudes such as discrepancies. It is not clear what "an uncorrected syndrome polynomial" refers to and how it differs from the standard syndrome

polynomial. Furthermore, nowhere does the Applicant's specification teach "a syndrome polynomial receiver receiving **an uncorrected syndrome polynomial** of the algebraic-coded message that includes redundancies".

In addition, claim 1 recites, "a syndrome polynomial producer being adapted to produce a **corrected syndrome polynomial** of the algebraic coded message". Nowhere does the Applicant's specification teach "a syndrome polynomial producer being adapted to produce a **corrected syndrome polynomial** of the algebraic coded message".

Claim 1 recites, "the inversionless calculator corrects errors in **the uncorrected syndrome polynomial**, resulting in a **corrected syndrome polynomial**". Nowhere does the Applicant's specification teach "the inversionless calculator corrects errors in **the uncorrected syndrome polynomial**, resulting in a **corrected syndrome polynomial**".

Claim 1 recites, "the inversionless calculator produces **the corrected syndrome polynomial** using the syndrome polynomial producer". Nowhere does the Applicant's specification teach "the inversionless calculator produces **the corrected syndrome polynomial** using the syndrome polynomial producer".

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites, "a plurality of polynomial storage devices being adapted to store polynomials". Polynomials are abstract mathematical elements. It is not clear how an abstract mathematical element can be stored or how they are stored in a hardware memory device. Note: since claims 11 and 12 depend from this particular limitation in claim 7, claims 11 and 12 fail to add any meaningful limitation to claim 7.

Claim 9 recited, "the inversionless calculator temporarily stores the discrepancy values in a first discrepancy variable and a second discrepancy variable, storing in the second discrepancy variable temporarily the last value previously stored in the first discrepancy variable". Variables are not storage devices; hence it is not clear how a value can be stored in a variable. As such claim 9 fails to add any meaningful limitation to claim 7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 7, 9, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Truong; T. K. et al. (US 6209115 B1, hereafter referred to as Truong) in view of Zook; Christopher P. (US 5446743 A).

35 U.S.C. 103(a) rejection of claims 7, 9, 11 and 12.

Truong teaches a syndrome polynomial receiver receiving a syndrome polynomial of the algebraic-coded message that includes redundancies usable to determine an existence of errors, a location and magnitude of errors and discrepancy values (Modified BM Algorithm circuit 14 in Figure 1 of Truong is a syndrome polynomial receiver receiving a syndrome polynomial for Syndrome Computation Unit 12 of the algebraic-coded message that includes redundancies usable to determine an existence of errors, a location and magnitude of errors and discrepancy values); a plurality of polynomial storage devices being adapted to store polynomials (Figures 2 and 3 of Truong teach a plurality of polynomial storage devices being adapted to store polynomials); a syndrome polynomial producer being adapted to produce a syndrome polynomial of the algebraic coded message (Syndrome Computation Unit 12 in Figure 1 of Truong is a syndrome polynomial producer being adapted to produce a syndrome polynomial of the algebraic coded message); one or more arithmetic--logic components, operably connected to the polynomial storage devices, the discrepancy value storage devices, the syndrome polynomial receiver, and the syndrome polynomial producer; and an inversionless calculator, operably connected to the polynomial storage devices, the discrepancy value storage devices, the syndrome polynomial receiver, the syndrome polynomial producer,

and the arithmetic-logic components (Figures 2 and 3 of Truong teach one or more arithmetic--logic components, operably connected to the polynomial storage devices, the discrepancy value storage devices, the syndrome polynomial receiver, and the syndrome polynomial producer; and an inversionless calculator, operably connected to the polynomial storage devices, the discrepancy value storage devices, the syndrome polynomial receiver, the syndrome polynomial producer, and the arithmetic-logic components), wherein the inversionless calculator corrects errors in the uncorrected syndrome polynomial, resulting in a corrected syndrome polynomial, using inversionless calculations and using the polynomial storage devices to store different states of progress of the inversionless calculations and the discrepancy value storage devices to store discrepancy values discovered in the uncorrected syndrome polynomial, and wherein the inversionless calculator produces the corrected syndrome polynomial using the syndrome polynomial producer (Modified BM Algorithm circuit 14 in Figure 1 of Truong teaches the inversionless calculator corrects errors in the uncorrected syndrome polynomial, resulting in a corrected syndrome polynomial, using inversionless calculations and using the polynomial storage devices to store different states of progress of the inversionless calculations and the discrepancy value storage devices to store discrepancy values discovered in the uncorrected syndrome polynomial, and wherein the inversionless calculator produces the corrected syndrome polynomial using the syndrome polynomial producer).

However Truong does not explicitly teach the specific use of a plurality of discrepancy value storage devices being adapted to store discrepancy values.

Zook, in an analogous art, teaches use of a plurality of discrepancy value storage devices being adapted to store discrepancy values (see Figure 2A in Zook).

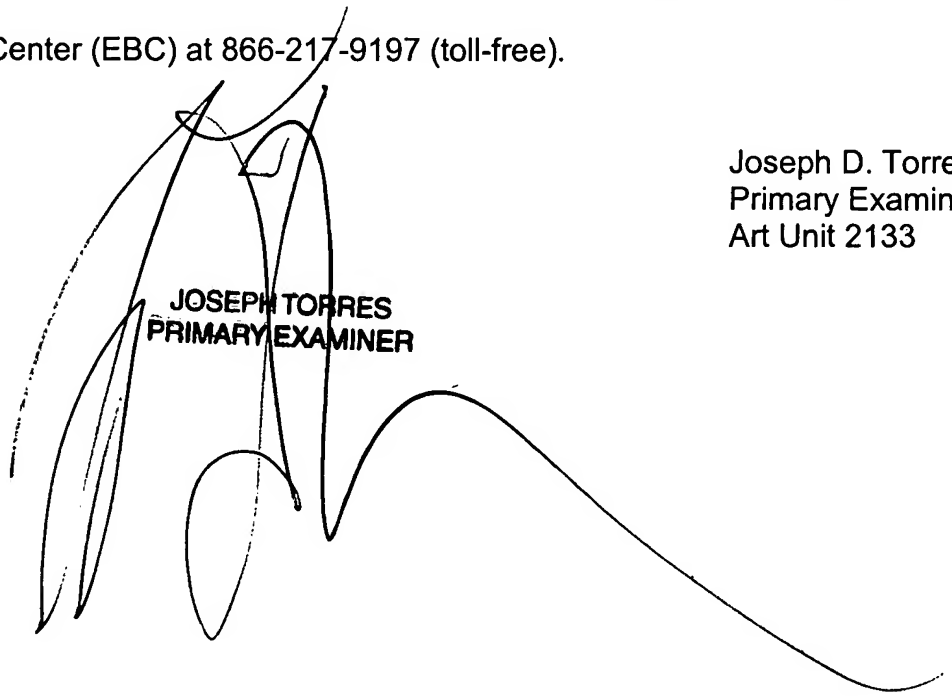
Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Truong with the teachings of Zook by including use of a plurality of discrepancy value storage devices being adapted to store discrepancy values. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a plurality of discrepancy value storage devices being adapted to store discrepancy values would have provided the opportunity to employ the Berlekamp-Massey algorithm.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Primary Examiner
Art Unit 2133